

REMARKS

Claims 1-43 are pending in the case. In the Office Action mailed January 28, 2005, the Examiner took the following action: (1) objected to the drawings due to informalities; (2) objected to claims 30 and 40 due to informalities; (3) rejected claims 1-4, 9, 10, 13, 14, 18, 19, 26, 27, 30-32, 36, 37, and 41-43 under 35 USC § 102(b) as being unpatentable over Kaloust (U.S. 6,246,929); and (4) rejected claims 5, 6, 15, 20-23, 32, and 33 under 35 USC § 103(a) as being unpatentable over Kaloust in view of White (U.S. 5,444,641). The Examiner indicated that claims 7, 8, 11, 12, 16, 1, 24, 25, 28, 29, 34, 35, 38-40 are dependent upon a rejected base claim, but would be allowable if rewritten to include the limitations of their respective base and intervening claims. Applicant respectfully requests reconsideration of the application in view of the foregoing amendments and the following remarks.

I. Objections to the Drawings

The Examiner objected to the drawings due to informalities. Applicant submits concurrently herewith formal drawings that correct the informalities noted by the Examiner. Specifically, the formal drawings (1) make legible the labels on the blocks of Figure 1; (2) make readable the symbols of Figures 2 and 3; and (3) add labels to the blocks of Figure 4. Applicant respectfully requests reconsideration and withdrawal of the objection to the drawings.

II. Objections to Claims 30 and 40

The Examiner objected to claims 30 and 40 due to the misspelling of the term device. Application has amended claims 30 and 40 to correct this information, and respectfully requests reconsideration and withdrawal of the objection to claims 30 and 40.


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III. Claim Rejections under 35 USC § 102(b) and § 103(a)

The Examiner rejected claims 1-4, 9, 10, 13, 14, 18, 19, 26, 27, 30-32, 36, 37, and 41-43 under 35 USC § 102(b) as being unpatentable over Kaloust; and rejected claims 5, 6, 15, 20-23, 32, and 33 under 35 USC § 103(a) as being unpatentable over Kaloust in view of White.

Kaloust (U.S. 6,246,929)

Kaloust teaches an autopilot controller for controlling a vehicle traveling in a fluid medium. In relevant part, Kaloust teaches three separate, independent actions: (1) inputting a plurality of signals from sensors 44 on the vehicle (9:36-37); (2) performing curve fits to the vehicle's aerodynamic and physical characteristics over a variety of flight conditions to develop a plurality of force and moment functions (12:39-43; 23:63-65); and (3) converting an acceleration command to an equivalent desired commanded angle α_{cmd} (25:40; 35:10-13).

Kaloust fails to disclose, teach, or fairly suggest the methods taught by Applicant. Specifically, Kaloust fails to teach or suggest *performing a closed form fit to the plurality of data points to obtain an initial curve fit condition*, and *performing at least one non-linear transfer function frequency response curve fit to the plurality of data points*.

Detailed review of Kaloust demonstrates that the curve fitting taught by Kaloust is unlike the curve fitting taught by Applicant. First, Kaloust fails to teach that the curve fitting is a “closed form fit” as taught by Applicant. More importantly, Kaloust does not teach curve fitting of the plurality of input signals from sensors 44 on the vehicle. Rather, Kaloust teaches curve fitting the vehicle's specific aerodynamic characteristics over a variety of flight conditions in order to determine a plurality of force and moment functions (each function generally designated as C). (23:63-65). As shown in Figures 6 and 7 of Kaloust, these force and moment functions relate to the vehicle's aerodynamic characteristics about its center of gravity. Kaloust states that “The complete database development results in a plurality of aerodynamic ‘surfaces’ which define the vehicle response for each of the C ... force and moment functions across a range of

operating conditions.” (12:39-43). Thus, the curve fitting taught by Kaloust is on aerodynamic data specific to the vehicle over a range of operating conditions, and is not related to the input signals from sensors 44 distributed over the vehicle. Specifically, Kaloust does not disclose, teach, or fairly suggest *reading a plurality of data points, each data point representing a motion at a location on the aeroelastic structure, and performing a closed form fit to the plurality of data points to obtain an initial curve fit condition*, as recited in Applicant’s claim 1.

Further detailed review reveals that Kaloust fails to disclose, teach, or fairly suggest *performing at least one non-linear transfer function frequency response curve fit to the plurality of data points*. Rather, Kaloust teaches that converting an acceleration command to an equivalent desired commanded angle α_{cmd} may be accomplished by either building a nonlinear equation that relates an acceleration command to an equivalent desired commanded angle α_{cmd} (35:14-15), or using a “linearized transfer function” (35:16). Thus, Kaloust fails to teach the use of a *non-linear transfer function* as taught by Applicant, and further, the application of a transfer function by Kaloust is not related to the input signals from sensors 44 distributed over the vehicle. For these additional reasons, Kaloust fails to disclose, teach, or fairly suggest the methods taught by Applicant.

White (U.S. 5,444,641)

White teaches equivalent circuit parameters of a piezoelectric resonator to precisely control the amplitude and/or frequency of an oscillator. More specifically, White teaches modeling a resonator by an equivalent circuit, and then measuring particular characteristics of the circuit to determine the response characteristics of the resonator. (2:37-65).

Applicant respectfully submits that there is no proper basis for combining the teachings of White with the teachings of Kaloust. For example, there is no proper motivation expressed in either Kaloust or White that would support an attempt to combine the respective teachings of these references. Also, Kaloust and White are non-analogous.

In addition, White fails to remedy the above-referenced absent teachings of Kaloust. More specifically, White fails to disclose, teach, or fairly suggest *performing a closed form fit to the plurality of data points to obtain an initial curve fit condition, and performing at least one non-linear transfer function frequency response curve fit to the plurality of data points.*

Because the above-noted limitations which are not disclosed, taught, or fairly suggested by Kaloust and White are contained within each of the independent claims 1, 13, 19, and 30, claims 1-43 are allowable over Kaloust and White. Applicants therefore respectfully request reconsideration and withdrawal of the rejections of all claims 1-43 under 35 USC § 102(b) and § 103(a).

CONCLUSION

For the foregoing reasons, Applicant respectfully requests reconsideration and withdrawal of the rejections of claims 1-43 and allowance of same. If there are any remaining matters that may be handled by telephone, the Examiner is kindly invited to telephone the undersigned.

Respectfully submitted,

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Enclosures: Formal Drawings

MAIL CERTIFICATE

I hereby certify that this communication is being deposited with the United States Postal Service via first class mail under 37 C.F.R. § 1.08 on the date indicated below addressed to: MAIL STOP AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

April 28 2005
Date of Deposit

Wendy Saxby
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